MICROWAVE POWER ABSORP7'1ON PROFILE IN A CYLINDRICAL SAMPLE CO NTAINED IN A RE SONANT CYLINDRICAL CAVITY

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ABSTRACT

An analytic approach has been used for evaluation of the resonant frequency, normal mode field, and microwave power absorption profile in a lossy dielectric cylindrical sample coaxially aligned in a cylindrical cavity. Calculated absorption profiles inside the sample will be presented for resonant modes that are intrinsically angular independent. Absorption profiles for circular] y polarized modes for which absorption is angular independent only for time averages will also be presented. implications of these results for microwave processing of materials will be discussed. Also, progress in calculating temperature profiles inside microwave-heated cylindrical samples will be described, [Work supported by NASA].